

with prominent English and American mathematicians on new geometrical subjects. Our author has a mission; if any hold with him, they should write to L. S. Benson, 149, Grand Street, New York City, and become the happy possessors of a copy of "Facts" for thirty cents. *De gustibus non disputandum.*

THE *North China Herald* reports a curious desire for improvement on the part of two Korean medical men, who belong to a nation which has hitherto shown itself the most determined in its self-isolation. These men have applied to Dr. Dudgeon, the Superintendent of the London Mission Hospital, for permission to attend there during the stay of the Korean embassy at Peking. They are described as very intelligent men, and they speak very disparagingly of their own medicine. For years they have been studying Hobson's medical works in Chinese, and they have also obtained Dr. Dudgeon's Anatomical Atlas. They are greatly interested in vaccination, and wish to introduce it into Korea. The stringency of Korean laws prevents natives from living out of their own country, but the next time the embassy visits Peking these two men intend to devote more time to the study of foreign medicine and surgery.

ALTHOUGH the existence of kerosene oil in several of the provinces of Japan is said to have been known for 1,200 years, the Japanese did not know how to refine it till about six years ago. Now, however, refining establishments are springing up rapidly, and its manufacture is becoming an important industry.

AT Dresden a new journal appeared on May 1 entitled *Zeitschrift für Museologie und verwandte Wissenschaften*; the editor is the Director of the celebrated "Grüne Gewölbe," Hofrath Dr. Grässe, the publisher, Herr T. M. Hofmann. Thus the circle of "collection-journals," i.e. journals for archives, libraries, and museums, is complete.

A GERMAN inventor has found a new use for asbestos, in the shape of leaves for a bank-note-album. These albums are said to protect bank-notes or other valuable documents to such an extent, that if they are laid between the leaves and the album is closed firmly, they even remain legible after being burnt to cinders.

MR. F. C. PENROSE writes to the *Times* from Copse Hill, Wimbledon, that on April 24, at 8.12 P.M., he saw an unusually fine meteor descending at a very steep angle, and when first noticed, at about 2° to the north of the bright star Procyon, and sloping a little to the north. It was yellowish, and although not in itself intensely bright, from its apparent size (5' long and 3' broad by estimation), surpassed the light of Venus at her maximum. It was as usual pear-shaped. After a course of about 10° from the point first mentioned, it left behind it three or four very bright blue star-like points, and vanished in a clear sky at about an altitude of 22° and 57° west of south. No sound of explosion was heard.

A PERUVIAN chemist, Dr. Arosemano, will exhibit an invention at the Paris Exhibition, which may become a very important one for commerce. He has succeeded in obtaining a magnificent dye from the violet or maroon Welshcorn of Peru, and this dye is said to impart the colour, odour, and taste of claret to all light white wines to such a degree, that it is impossible to distinguish the coloured wine from real claret, without being in the least injurious to the health of the consumer. Besides this a number of other uses are mentioned to which this Welsh corn-dye can be put.

THE German Telegraph Office is rapidly introducing the telephone; 68 stations are already provided with this instrument, 41 others will have it in a few weeks, and 111 more before the end of the year; thus there will be then a total of 220 telephone-stations in Germany.

To commemorate the 100th anniversary of the discovery of the Sandwich Islands by Cook, a statue of the great discoverer will be erected on Diamond Peak, a burnt-out crater near Honolulu.

SEVEN extremely interesting pictures are now being exhibited at Berlin by the painter, Herr J. L. Wensel; they represent scenes from the second German North Polar Expedition during the years 1869 and 1870, and are executed after sketches made on the spot by several members on the staff of the expedition.

THE Conference on the National Water Supply, in connection with the Society of Arts, will meet on the 21st and 22nd inst., and will be followed on the 23rd and 24th by a Conference on the Health and Sewage of Towns.

THE additions to the Zoological Society's Gardens during the past week include a Beisa Antelope (*Oryx beisa*) from North-East Africa, presented by H.H. the Sultan of Zanzibar; an African Leopard (*Felis pardus*) from Africa, presented by Mrs. Kirk; a Black Wallaby (*Halmaturus ualabatus*), a Laughing Kingfisher (*Dacelo gigantea*) from Australia, presented by Mr. D. W. Barker, jun.; a Sand Lizard (*Lacerta agilis*), a Smooth Newt (*Triton teniatus*), European, presented by the Masters W. L. and B. L. Slater; a Common Seal (*Phoca vitulina*) from British seas, a Cariama (*Cariama cristata*) from Brazil; a Guira Cuckoo (*Guira piririgua*) from Para, a Crested Curassow (*Crax alector*) from Guiana, a Bar-headed Goose (*Anser indicus*) from India, a White-faced Tree Duck (*Dendrocygna viduata*) from Brazil, a Red-billed Tree Duck (*Dendrocygna autumnalis*) from America, a Blue-bonnet Parrakeet (*Psephotus hemato-gaster*) from Australia, purchased; a Bennett's Wallaby (*Halmaturus bennetti*), born in the Gardens.

THE UNIVERSITY OF OXFORD COMMISSION

THE Vice-Chancellor has received from the University of Oxford Commissioners a Statement with respect to the main purposes relative to the University, for which, in their opinion, provision should be made under the Act, the sources from which funds for those purposes should be obtained, and the principles on which payments from the colleges should be contributed. The statement is somewhat similar to that published in reference to Cambridge some weeks since, only more detailed.

As to the main purposes relative to the University for which provision should be made under the Act, the first in order of these purposes is, in their opinion, the extension and proper endowment of the professoriate, and the better organisation of University teaching. As to which two principal objects should be kept in view:—1. The due representation at Oxford of every considerable branch of knowledge, the advancement of which can be effectually promoted by the University, as a place either of education or of learning and research; and 2. The due participation of the University itself, as distinct from its colleges in the direction and improvement of the studies of its undergraduate and other students.

The Commissioners are unable to adopt the views of those who would desire to transfer to the University the whole or the chief part of the teaching work now done by the colleges either separately or by means of intercollegiate arrangements. They think that among the recognised studies of the University there are some (such as natural science) for which the colleges cannot be expected to make adequate provision, either without, or by means of, those intercollegiate arrangements.

Many of the existing professorships are inadequately endowed, and ought to have their emoluments increased. Of a few the emoluments are in excess of what we think necessary. There are others the constitution, designation, and duties of which may, when they become vacant, be advantageously modified. The Commissioners also think that some new chairs should be established and adequately endowed.

The stipends of the professors (other than those of the theological faculty) should, in the Commissioners' opinion, be of varying amounts, according to the relation of their several

subjects to the studies of the University and to other circumstances material to be considered. Those of the following, among other Chairs should, they think, be augmented, so that the lowest of them should be not less than 700*l.* nor the highest more than 900*l.* per annum—namely, Astronomy; Geometry; Natural Philosophy; Chemistry.

They would also assign stipends, varying between the same limits, to the following Chairs, constituted by division or modification of existing foundations:—Physics—dividing between these two Chairs the subjects of the present Chair of Experimental Philosophy; Physiology; Human and Comparative Anatomy—dividing between those two Chairs the subjects of the present Linacre Professorship.

Stipends varying between the same limits should also be assigned to the following new Chairs, which they think ought to be established—English Language and Literature; Pure Mathematics; Mechanics and Engineering.

The stipends of the following Chairs should, they think, be augmented, so that the lowest of them should not be less than 400*l.*, nor the highest more than 500*l.* per annum—Medicine; Botany; Zoology; Geology; Mineralogy.

The evidence and opinions which the Commissioners have received lead them to the conclusion that it is expedient to develop as much as possible those branches of scientific instruction which are introductory and preliminary to medicine, rather than to attempt the establishment of a practical School of Medicine in Oxford.

It may be desirable to provide a reader in Human Anatomy, as assistant to the Professor of Human and Comparative Anatomy, with a stipend of from 250*l.* to 300*l.* per annum; and they think there should also be a reader (with a present stipend of 400*l.* per annum) in Invertebrate Anatomy, whose office, upon a vacancy in the Professorship of Zoology, should be united to that Chair, with such an increase in the emoluments of the professor as may make them equal to those of the Chair of Human and Comparative Anatomy, conditionally on his undertaking the additional duty.

Additional demonstrators appear to be required in several departments of natural science, who, in most cases may best be paid by fees, with supplementary grants when needful from the University chest.

There are several other purposes relative to the University which they regard as important, and for some of which definite provision ought to be made under the Act. Among these are:—

The foundation and endowment of scholarships or exhibitions tenable after a certain fixed period of residence in the University, for students in any special branches of study (including subjects which do not fall within the ordinary University course, such, for example, as medicine), which may be usefully promoted by such encouragement, under conditions properly adapted to make their enjoyment dependent upon the *bonâ fide* prosecution of such studies.

The encouragement of research, by the employment of properly qualified persons, under the direction of some University authority, in doing some definite work, or conducting some prescribed course of investigation, in any branch of literature or science; or by offering prizes or rewards for any such work or investigation.

The appointment and remuneration, from time to time, by the University authorities, of extraordinary professors or occasional lecturers in any subjects, either represented or not on the ordinary teaching staff of the University.

The last, and not the least important, of the main purposes relative to the University for which, in the Commissioners' opinion, provision should be made under the Act, is the creation of a common University fund, to be administered under the supervision of the University, in addition to its general corporate revenues.

They look to the creation of this fund (of which the formation must be gradual) as the proper resource for the supply of all the wants enumerated under the preceding head, except such of them as any college may propose to aid in supplying.

As to the sources from which funds for the above purposes should be obtained, they are of opinion that these funds must necessarily be obtained from the colleges.

As to the principles on which payments by the colleges for the above-mentioned purposes should be contributed, it will be necessary to take into account the revenues, actual and prospective, of each college, and its actual and prospective wants for educational and other purposes, before they can form a judgment as to the amount which it should be called upon to contribute. They

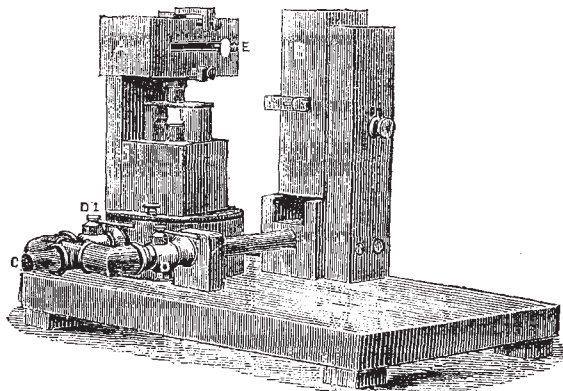
think it expedient to retain in Oxford a considerable number of prize fellowships (that is, fellowships not coupled with any specific duty or service to a college or to the University), for the encouragement and reward of meritorious students. Such fellowships should, they think, as a rule, be terminable; and their present impression is that their emoluments should be of uniform amount and should not exceed 200*l.* per annum.

The Commissioners have already received from some of the colleges proposals made, in a liberal spirit, in harmony with the views which they have expressed; and they are confident that they will receive such assistance from the University and the colleges generally, as may be necessary to enable them to determine when, and in what order of priority, provision shall be made for all the purposes specified in the first part of this statement.

AN IMPROVED METHOD OF PROJECTING LISSAJOUS' FIGURES ON THE SCREEN¹

AS is well known, the vibrations of tuning-forks when used for the production of Lissajous' figures, are kept up either by the constant application of the violin bow, or by the aid of an electro-magnet; the former method requiring the presence of two assistants, and the latter adding materially to the complexity of the apparatus, and not unfrequently failing to produce the desired result. The difficulty is overcome in the present apparatus by the substitution of harmonium reeds for the tuning forks, the entire instrument being easily controlled by one operator.

The apparatus consists of a base board on which are planted the two reed boxes A and B. The box A is placed horizontally in such a manner as to be capable of slight rotation in the horizontal plane, and also of adjustment in height, by means of the support to which it is attached being provided with a slot and set screw. The box B is permanently attached to the base board in the vertical position. The boxes are so placed that a pencil of light falling directly on E would be reflected to B about one inch from its top; they are furnished with clamping screws



for the attachment of the reeds. The boxes are entirely open on the sides facing each other, their margins being covered with soft leather on which the reed plates bed, making a sufficiently air-tight joint. Wind is supplied through the brass tube C which gives off a branch to each box, a stopcock DD' being inserted in each branch. The reeds are similar to those used in the construction of harmoniums; they are mounted on brass plates which fit the reed boxes. The tongue of each reed is furnished, at its free end, with a small reflector of microscopic covering-glass (E) silvered by Liebig's process, a piece of cork or pith being interposed between the tongue and the reflector, so as to free the latter from the frame of the reed; the reeds are then tuned in the usual manner. It is not necessary that the reeds should be in absolute tune, as, within certain limits, their relative vibrations can be adjusted by means of the stop-cocks, an advantage of great value, believed to be solely possessed by this apparatus.

The reed in the vertical box gives the fundamental ratio of vibrations from which the intervals are built up. Two fundamental reeds are used interchangeably, one giving the double or

¹ Paper read at Lit. and Phil. Soc., Manchester, February 5, by J. Dixon Mann, L.K.Q.C.P.